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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,075	02/15/2002	Bong-gi Kim	1293.1318	8497
21171	7590	05/16/2007		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER AGUSTIN, PETER VINCENT	
			ART UNIT 2627	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/076,075  
Filing Date: February 15, 2002  
Appellant(s): KIM, BONG-GI

**MAILED**

**MAY 16 2007**

**Technology Center 2600**

Samsung Electronics Co., Ltd.  
Appellant

**EXAMINER'S ANSWER**

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This is in response to the appeal brief filed February 27, 2007 appealing from the Office action mailed July 25, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,392,977	Ando et al.	5-2002
5,659,531	Ono et al.	8-1997

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

Claims 1, 3-15, 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al. (US 6,392,977) in view of Ono et al. (US 5,659,531) and the admitted prior art.

In regard to claim 1, Ando et al. disclose an optical pickup apparatus (Figure 1) comprising: a first light source (3a) to generate a first light beam (L1); a second light source (3b) to generate a second light beam (L2) whose optical axis is parallel to the optical axis of the first light beam (optical axis is read to correspond to the path of the light beams starting from the coating 4a of the beam splitter 4 and ending at the recording medium), the second light source being disposed optically farther from a recording medium than the first light source; a photodetector (15) to receive the first light beam and the second light beam which are emitted from the first and second light sources, respectively, and which are reflected from the recording medium and performing photoelectric conversion; an objective lens (9) to focus the first light beam and second light beam on the recording medium, the objective lens being disposed on an optical path between the first and second light sources and the recording medium; and a beam splitter (7) disposed on an optical path between the objective lens and the photodetector, the beam splitter having a first surface to reflect the first light beam and the second light beam toward the objective lens and simultaneously transmitting the first light beam and the second light beam, and a hologram (8) for compensating for a deviation between

optical axes of the first and second light beams transmitted through the first surface, wherein the hologram is formed to diffract the first light beam into a relatively more +1-order diffracted light beam and relatively less residual light, and to diffract the second light beam into a relatively more zero-order diffracted light beam and relatively less residual light (column 6, lines 20-29).

In regard to claim 3, Ando et al. disclose that the first surface is set such that the first light beam and the second light beam are incident thereon at an angle of  $45^\circ$  (column 6, line 1).

In regard to claim 4, Ando et al. disclose a coating (7a) formed on the first surface so that approximately 50% of the first light beam is reflected and approximately 50% thereof is transmitted (column 6, lines 9-12).

In regard to claim 5, Ando et al. disclose a coating formed on the first surface so that approximately 50% of the second light beam is reflected and approximately 50% thereof is transmitted (column 6, lines 9-12).

In regard to claim 6, Ando et al. disclose that the hologram is formed such that the +1-order diffracted light beam is at least 70% as much as the first light beam (column 6, lines 20-29).

In regard to claim 7, Ando et al. disclose that the hologram is formed such that the zero-order diffracted light beam is at least 70% as much as the second light beam (column 6, lines 20-29).

In regard to claim 8, Ando et al. disclose a collimating lens (6) on an optical path between the beam splitter and the objective lens.

In regard to claim 9, Ando et al. disclose a concave lens (14) on an optical path between the beam splitter and the photodetector. Note that element 14 is a multiple lens, which is known in the art as comprising a concave lens.

In regard to claim 18, Ando et al. disclose that a coating is formed on the first surface so that approximately 50% of the second light beam is reflected and approximately 50% thereof is transmitted (column 6, lines 9-12).

However, Ando et al. do not disclose: in regard to claim 1,

(a) that the hologram is formed on a second surface of the beam splitter (note that Ando et al.'s hologram is separately provided from the beam splitter, and not formed on any surface of the beam splitter), and

(b) that the optical axis of the first light beam is parallel to the optical axis of the second light beam before the first and second light beams are reflected by the beam splitter and after the first and second light beams are reflected by the beam splitter.

In regard to (a), Ono et al. disclose a beam splitter (Figure 11A, element 216) having a surface on which a hologram is formed. It would have been obvious to one of ordinary skill in the art at the time of invention to have applied the teachings of Ono et al. to the apparatus of Ando et al., the motivation being to provide a compact, light and low cost optical head device (see last three lines of abstract).

In regard to (b), the admitted prior art discloses a first light source (13) to generate a first light beam and a second light source (15) to generate a second light beam whose optical axis is parallel to the optical axis of the first light beam, the second light source being disposed optically farther from a recording medium (25) than the first light source,

and wherein the optical axis of the first light beam is parallel to the optical axis of the second light beam before the first and second light beams are reflected by the beam splitter (19) and after the first and second light beams are reflected by the beam splitter. It would have been obvious to one of ordinary skill in the art at the time of invention to have applied the teachings of the admitted prior art to the apparatus of Ando et al., the motivation being to decrease the number of parts used to manufacture the optical pickup apparatus (see paragraph 0004 of the specification).

Claims 10-15 & 17 have limitations similar to those of claims 1 & 3-7; thus, they are rejected on the same basis.

#### **(10) Response to Arguments**

(a) The Appellant argues on page 16, paragraph 6 that Ono does not disclose, teach, or suggest “a hologram is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface”. The examiner would like to point out that this recitation is incomplete. The Board is directed to claim 1, lines 12-17, which recites a beam splitter having a first surface and “a second surface on which a hologram is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface”. In the rejection of claim 1, Ando et al. was relied upon to teach a hologram that compensates for a deviation between optical axes of first and second light beams transmitted through a first surface of a beam splitter. It is noted that the hologram of Ando et al. (see Figure 1, element 8) is separately provided from the beam splitter (7). Therefore, the examiner concedes that the beam splitter of Ando et al. does not have “a second surface on which a hologram is

formed”. To show this missing feature, the Ono et al. reference was relied upon for teaching a beam splitter having a surface on which a hologram is formed (see Figure 11A, element 216). Ono et al. teach that this arrangement enables to make a compact, light weight, and low cost optical head device (see last three lines of abstract). Therefore, by arguing that Ono et al. do not teach a beam splitter having a second surface on which a hologram is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface, the Appellant is attacking references individually where the rejection is based on a combination of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(b) In response to Appellant’s argument on page 17, paragraph 2 that “neither Ando nor Ono shows a beam splitter capable of forming a hologram...”, this language is neither claimed nor supported by the specification. Claim 1 recites that “a hologram is formed” on a second surface of a beam splitter, which is very different from “a beam splitter capable of forming a hologram”.

(c) In response to Appellant’s arguments on page 17, paragraph 2 that “neither Ando nor Ono shows a beam splitter capable of forming a hologram to compensate for a deviation between optical axes of the first and second light beams”; “neither Ando nor Ono shows the beam splitter 35 shown in Figure 2 of the present application”; and “Ando’s beam splitter 7 does not form a hologram and Ono’s hologram element 216 does not compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface”, see items (a) & (b) above.



(d) In response to Appellant's argument on page 17, paragraph 3 that even if Ono's hologram element 216 was substituted for beam splitter 7 and dichroic hologram 8 in Ando, the combination of Ando and Ono does not provide, "beam splitter having...a second surface on which a hologram is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface", see item (a) above.

(e) In response to Appellant's argument on page 17, paragraph 4 that "one having ordinary skill in the art would not have been motivated to combine the cited references", as noted in item (a) above, Ono et al. teach that a beam splitter having a hologram formed on one surface enables to make a compact, light weight, and low cost optical head device (see last three lines of abstract). Furthermore, the inventor's use of a one piece construction, i.e., beam splitter combined with a hologram, instead of the structure disclosed in Ando et al. or the admitted prior art would be merely a matter of obvious engineering design choice. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) and MPEP § 2144.04, which the court held that it is obvious to make an item integral that was once separate.

(f) In response to Appellant's argument on page 17, paragraph 4 that Ono does not recognize the problem of spherical aberration due to substrate thickness: (1) this limitation is not recited in the rejected claims; (2) this argument attacks references individually where the rejection is based on a combination of references. Note that the primary reference, Ando et al. can be relied upon for recognizing the problem of spherical aberration (see abstract); and (3) it is not necessary that the prior art suggest the

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combination to achieve the same advantage or result discovered by the applicant, see, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (motivation question arises in the context of the general problem confronting the inventor rather than the specific problem solved by the invention); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323, 76 USPQ2d 1662, 1685 (Fed. Cir. 2005) (“One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings.”), see also MPEP § 2144.

(g) In response to Appellant’s arguments on page 18 regarding the rejection of independent claims 10 & 15 (which have similar limitations as claim 1) and claims 3-9, 11-14, 17 & 18 (which are dependent upon rejected base claims), please refer to items (a) through (f) above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,




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